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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/618,936
Filing Date: July 14, 2003
Appellant(s): BACHER ET AL.

William Conger
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 1/23/2009 and supplemental appeal brief filed 4/22/2009 appealing from the Office action mailed 8/28/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

Earlier in the prosecution history, the final rejection mailed on 11/23/2005 was appealed and the examiner was affirmed by the Board on 2/27/2007.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner: the rejection over claims 1, 4-7, 10-15, 17, and 21-23 under 35 USC 112, 1st paragraph for lack of written description.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 4,879,336	Schilling et al	11-1989
US 4,617,239	Maruyama et al	10-1986

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 4-7, 10-17, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schilling et al (US 4,879,336) in view of Maruyama et al (US 4,617,239).

Schilling et al discloses a coating slip composition for printing bases such as paper (col. 2, lines 27-30) prepared by the method disclosed in col. 3, lines 22-44, therein the composition comprises a binder polymer containing 50-95 wt % vinyl alcohol units, 5-50 wt % of 1-alkylvinyl alcohol units of 1-4 alkyl carbon atoms, and 0-5 wt % of other polymerizable monomers (col. 2, lines 36-65) which is preferably fully saponified with a Hoppler viscosity of 4-10 mPas (col. 1, line 61 to col. 2, line 4; Table 1 in col. 5). The vinyl alcohol units and

alkylvinyl alcohol units are derived from hydrolyzed vinyl esters, e.g., vinyl acetate and isoprenyl acetate (col. 3, lines 23-26; col. 4, lines 34-37). Schilling et al teaches that the copolymer is present in a coating slip in an amount of 3-30 wt % (abstract) and that coating slips comprises pigment such as kaolin and calcium carbonate (col. 1, lines 11-13).

Schilling et al does not disclose the use of an ethylenically unsaturated silane-containing monomer. However, note that it is open to the use of any suitable additional monomer (col. 2, lines 45-46).

Maruyama et al discloses a paper coating agent and teaches that a modified polyvinyl alcohol containing silicon (co. 3, line 12 to col. 6, line 28) imparts water resistance, printability, surface strength, and barrier properties to a coated paper (col. 1, lines 9-40; col. 2, lines 8-13) when present in an amount of 0.01-10 mol % of the polyvinyl alcohol (col. 2, lines 58-61). It is presumed that the improvement in the aforementioned properties is due to a reaction between the silicon portion of the modified PVOH with the paper substrate which provides for a firm uniform surface layer that does not penetrate into the paper (col. 9, line 8-26).

Given that Schilling et al is open to the use of another monomer and given the benefits of utilizing an ethylenically unsaturated silane-containing monomer in a PVOH binder for paper applications as taught by Maruyama et al, it would have been obvious to one of ordinary skill in the art to utilize a silane-containing monomer in the polyvinyl alcohol of Schilling et al.

With respect to claim 15, note that the phrase "suitable for use in ink jet printing" in is intended use which is given no patentable weight. Regardless, it is considered that it would have been obvious to one of ordinary skill in the art to utilize Schilling et al's paper in such a common paper printing application, there being no evidence or suggestion otherwise.

With respect to the use of a cationic dispersant (claim 23), while Schilling et al teaches the use of a dispersing agent (col. 1, line 14), it fails to disclose whether it is cationic. It is the examiner's position that the charge of a dispersant is controlled by the pH of the composition used. Therefore, it would have been obvious to one of ordinary skill in the art to utilize a positive charge on the dispersant and thus a cationic dispersant in a composition having basic properties.

(10) Response to Argument

Appellants argue that there is no motivation to combine Schilling et al with Maruyama et al to obtain the desired storage stability and abrasion resistance properties.

Schilling et al and Maruyama et al are both directed to polyvinyl alcohol coating slip compositions. Maruyama et al teach the benefits of using an ethylenically unsaturated silane-containing monomer such as improved water resistance, printability, surface strength, and barrier properties. Schilling et al is clearly open to the use of other monomers and hence one of ordinary skill in the art would be motivated to use such an advantageous monomer as taught by Maruyama et al to obtain said advantages. Schilling et al uses the alkylvinyl alcohol for other reasons (i.e., improvements on solubility and "pigment shock). Case law holds that "the fact that applicant uses sugar for a different purpose does not alter the conclusion that its use in a prior art composition would have been *prima facie* obvious from the purpose disclosed in the reference." *In re Linter*, 458 F.2d 1013, 173 USPQ 560, 562 (CCPA 1972). Furthermore, while Schilling et al does not teach improved storage stability as negligible increase in viscosity as apparently

defined by applicant, Schilling et al teaches that its invention improves upon solubility which is an indicator of storage stability since precipitation out of solution is a type of storage instability.

In the earlier case applicants appealed the final rejection. That final rejection was affirmed by the board (dated 2/27/2007). In that case, the Board, in agreeing with the examiner, stated: "We therefore agree with the Examiner that one of ordinary skill in the art would have incorporated the silicon-containing monomer of Maruyama into the cobinder composition of Schilling for its expected advantages of bind pigments to produce improved surface properties" (page 6).

Appellants argue that Maruyama et al teaches away from storage stability because its polymers contain ethylenically unsaturated silane-containing monomers with reactive silanes which, when reacted with water, leads to viscosity increases and eventual undesirable gelling (evidenced by appellants' Comparative Example 1).

Maruyama et al teaches that the coating agent gels "[o]n contact with paper" (col. 2, lines 8-9). The gellation to which the Appellants refer is the gellation before use on the paper. Appellants cite col. 7, lines 51-64 of Maruyama et al which states that the reactive groups "*may* partly form siloxane bonds" (emphasis added) as evidence that the coating agent is unstable; however, these reactions only may occur and therefore only may causes gellation. Hence the viscosity increases and undesirable gelling only fall within one possible embodiment of Maruyama et al. Furthermore, while the copolymer of Maruyama et al may be unstable, the copolymer itself of Maruyama et al is not utilized in the outstanding rejection. Rather, it is the copolymer had by combining the teachings of Schilling et al (which fails to teach or suggest storage instability) and Maruyama et al.

Appellants argue that there is no evidence that Schilling et al does not have a gelling problem and that there is no way that one skilled in the art could have predicted that upon addition of ethylenically unsaturated silane-containing monomers to the polymer of Schilling et al that the silane-containing copolymer would be free from gellation.

Schilling et al discloses the use of alkylvinyl alcohols, which intrinsically provides for no gellation problem. The alkylvinyl alcohol is already present in Schilling et al's copolymer and it is only the addition of the ethylenically unsaturated silane-containing monomer of Maruyama et al that is rendered obvious. Considering that the copolymer of Maruyama et al does not necessarily have a gelling problem (col. 7, lines 61-64), it is expected to not have a gelling problem with the presently claimed copolymer that contains both alkylvinyl alcohol and ethylenically unsaturated silane-containing monomer.

Appellants argue that the instant claims are reasonably commensurate in scope with the data in the application as originally filed and in the declaration filed on 5/27/2008 to establish surprisingly and unexpectedly that the addition of 1-methylvinyl acetate comonomers to silane-containing polymers provides improved storage stability and abrasion resistance.

the data in the specification as originally filed and in the declaration filed on 5/27/2008 cannot serve to establish unexpected or surprising results for several reasons.

First, the inventive example contains vinyl triethoxy silane for the "silane-containing, ethylenically unsaturated monomers." Case law holds that evidence is insufficient to rebut a *prima facie* case if not commensurate in scope with the claimed invention. *In re Grasselli*, 713 F.2d 731, 741, 218 USPQ 769, 777 (Fed. Cir. 1983). While applicant contends that the use of one silane over another is equivalent, such has not been clearly shown on the record.

Specifically, a silane-containing, ethylenically unsaturated monomer with heteroatoms as recited in claim 1 are not exemplified and it is not made clear how these monomers are obvious variants of vinyltriethoxysilane and vinylmethyldiethoxysilane.

Second, the relative amounts of monomer are not reasonably commensurate in scope with the scope of the claims. Case law holds that whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support." In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range (i.e., scope). *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980), MPEP 716.02(d). Specifically, the amounts of 1-methylvinyl acetate (6.2 mol %) and silane-containing, ethylenically unsaturated monomer (0.33 mol %) in inventive Example 1 (of specification and declaration filed on 5/27/2008) and Example 2 (of declaration filed on 5/27/2008) are not reasonably commensurate in scope with 1-30 mol % and 0.1-1 mol %, respectively, of the instant claims. It is noted that the amounts in mol % were calculated by the examiner from the amounts in grams.

Third, the inventive and comparative examples are not proper side-by-side examples because the relative amount of methylvinyl acetate comonomer in POVAL® R-1130 is not given and therefore the relative amount of vinyltrimethoxysilane in mol % in the comparative copolymer cannot be calculated.

Appellants argue that one of ordinary skill in the art would not utilize isopropenyl acetate as a comonomer because of its considerable cost

Case law holds that the fact that a combination would not be made by businessmen for economic reasons does not mean that a person of ordinary skill in the art would not make the combination because of some technological incompatibility. *In re Farrenkopf*, 713 F.2d 714, 219 USPQ 1 (Fed. Cir. 1983)

Appellants argue that the age of the cited references supports the patentability of the claimed subject matter.

In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

(11) Related Proceeding(s) Appendix

Copies of the court or Board decision(s) identified in the Related Appeals and Interferences section of this examiner's answer are provided herein.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Vickey Nerangis

/Vickey Nerangis/
Examiner, Art Unit 1796

Conferees:

/David Wu/

Supervisory Patent Examiner, Art Unit 1796

/Anthony McFarlane/